Polynomials

when you add two algebraic terms
$x^2 + 1$ is a polynomial

the degree of the polynomial corresponds to the highest exponent of the terms. If it has multiple variables, you add their exponents
$x^3 + 2x + 1$ is a 3rd order polynomial, also called a trinomial

$xy + x + 3$ is a second order polynomial, because you add the exponents of the xy to be 2

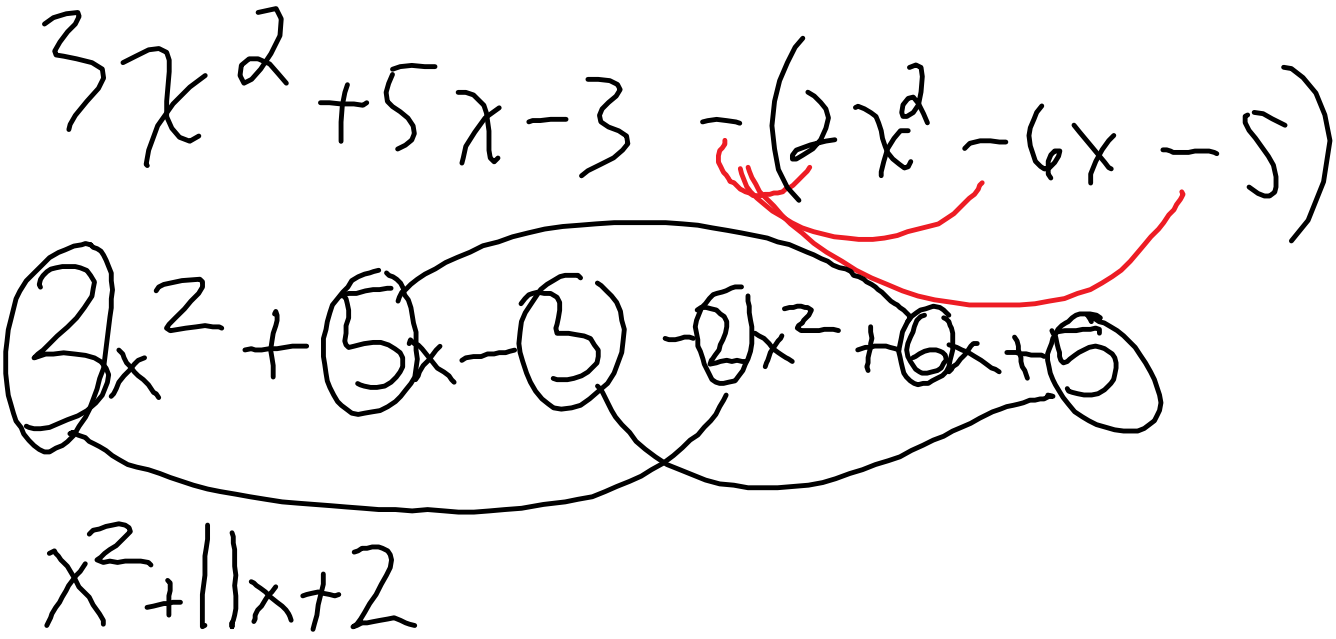
$3x + 5y + z$ is a first order polynomial

x^3y+1 is a fourth order polynomial, it doesn't have a commonly used name

When you combine like terms, you add the number in from of the variable (coefficient)

$3x^2 + 2x + 3 + (4x^2 - 3x - 7) =$

$7x^2 - x - 4$



Polynomials

when you add two algebraic terms
$x^2 + 1$ is a polynomial - binomial

1 2 Terms

Like terms have the same variables to the same exponent

x^2y is like to yx^2 but not xy

monomial - one term xy degree 2

binomial is two terms xy +1 degree 2

trinomial is three terms $x^2 + xy + 1$ degree 2

degree corresponds to the highest power of the polynomial

x^2y is degree 3 because 2 from x^2 and 1 from y

z^3y^2 is degree 5 because 3 from z^3 and 2 from y^2

convention is to write polynomials in decreasing order of degree

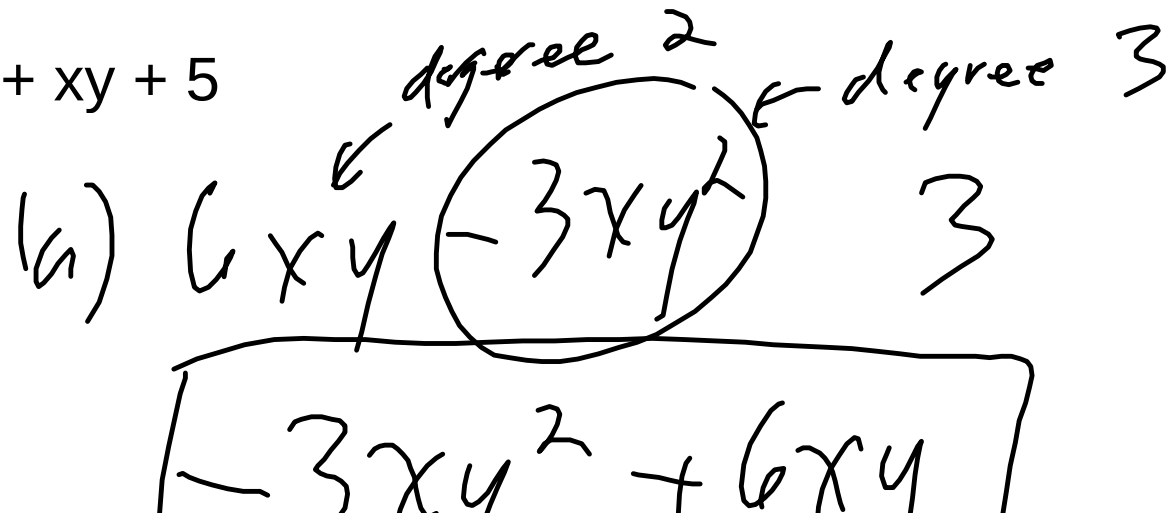
$x^2 + 1$ instead of $1+x^2$

combining like terms, you add the number in front of the term

Work - in class and at home?

p175-177 left hand side
p178 bonus use $A=\pi r^2$ for a circle (3.14159....)

$x^2y + xy + 5$



$$-3xy^2+6xy$$

horizontal

$$x^2+3x+5-(2x^2+2x-4)$$

$$x^2-2x^2+3x-2x+5+4$$

$$-x^2+x+9$$

vertical

$$x^2+3x+5$$

$$-\ 2x^2-2x+4$$

$$-x^2+x+9$$